What is claimed is:

1.   A transmitter for transferring packet data to a receiver side via a network, comprising:

an identifier adding means for deciding whether or not the packet data is transmitted exceeding a guaranteed bandwidth based on the guaranteed bandwidth set in advance with respect to the transfer of the packet data and, in accordance with the result of the related decision, adding a first identifier to the packet data when the packet data is transmitted without exceeding the guaranteed bandwidth, while adding a second identifier to the packet data when the packet data is transmitted exceeding the guaranteed bandwidth, and

a transmitting means for transmitting the packet data to which the identifier has been added to the network.

2.   A transmitter as set forth in claim 1, wherein when there is one flow between the transmitter side and the receiver side, the identifier contains an IP address of the transmitter side, an IP address of the receiver side, a port number of the transmitter side, a port number of the receiver side, and an additional information indicating whether or not a bandwidth guarantee is to be set.

3.   A transmitter as set forth in claim 1, wherein

when there is a plurality of flows between the
transmitter side and the receiver side, the identifier
contains the IP address on the transmitter side, the IP
address on the receiver side, the port number on the

5 transmitter side, and the port number on the receiver
side.

4. A transmitter as set forth in claim 1, wherein
the transmitting means has a token bucket shaper and
transmits the data to the network in the set guaranteed

10 bandwidth by using the token bucket shaper for the packet
data to be transmitted without exceeding the set
bandwidth.

5. A transmitter as set forth in claim 4, wherein
the token bucket shaper has a token generating means for

15 generating a token in accordance with the set guaranteed
bandwidth.

6. A transmitter as set forth in claim 1, further
comprising a receiving means for receiving packet data
transferred via the network.

20 7. A transmitter as set forth in claim 6, wherein
the identifier adding means decides whether or not the
packet data received by the receiving means has been
transmitted exceeding the guaranteed bandwidth set in
advance, and, in accordance with the result of the

25 related decision, adding one of a first identifier and

second identifier to the packet data.

8. A transmitter as set forth in claim 1, wherein further provision is made of a registering means for registering identifiers corresponding to packet data to

5 be transferred without exceeding the set guaranteed bandwidth and guaranteed bandwidths thereof.

9. A communication system for transferring packet data from a transmitter side to a receiver side via a network, comprising, on the transmitter side,

10 an identifier adding means for deciding whether or not packet data is transmitted exceeding a set guaranteed bandwidth based on a guaranteed bandwidth set in advance with respect to the packet data to be transferred and, in accordance with the result of the

15 related decision, adding a first identifier to the packet data when the packet data is transmitted without exceeding the guaranteed bandwidth, while adding a second identifier to the packet data when the packet data is transmitted exceeding the guaranteed bandwidth, and

20 a transmitting means for transmitting the packet data to which the identifier has been added to the network.

10. A communication system as set forth in claim 9, wherein when there is one flow between the transmitter

25 side and the receiver side, the identifier contains an IP

address of the transmitter side, an IP address of the
receiver side, a port number of the transmitter side, a
port number of the receiver side, and an additional
information indicating whether or not a bandwidth

5   guarantee is to be set.

11. A communication system as set forth in claim 9,
wherein when there is a plurality of flows between the
transmitter side and the receiver side, the identifier
contains the IP address on the transmitter side, the IP

10   address on the receiver side, the port number on the
transmitter side, and the port number on the receiver
side.

12. A communication system as set forth in claim 9,
wherein

15   a plurality of receivers are provided on the
receiver side, the same multi-cast communication use IP
address is assigned to each receiver, and,

when multi-cast communication is carried out
from the transmitter side with respect to the plurality

20   of receivers, the identifier contains the IP address on
the transmitter side, the multi-cast communication use IP
address on the receiver side, the port number on the
transmitter side, and the port number on the receiver
side.

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13. A communication system as set forth in claim 9, wherein the transmitting means has a token bucket shaper and transmits the data to the network in the set guaranteed bandwidth by using the token bucket shaper for

5 the packet data to be transmitted without exceeding the set bandwidth.

14. A communication system as set forth in claim 13, wherein the token bucket shaper has a token generating means for generating a token in accordance

10 with the set guaranteed bandwidth.

15. A communication system as set forth in claim 9, further comprising a relay unit for receiving packet data transferred via the network and further transferring the received packet data to the receiver side,

15 16. A communication system as set forth in claim 15, wherein the relay unit comprises:

a receiving means for receiving the packet data from the network,

an identifier adding means for deciding whether

20 or not the packet data received by the receiving means has been transmitted exceeding the guaranteed bandwidth set in advance, and, in accordance with the result of the related decision, adding a first identifier to the packet data when the packet data is transmitted without

25 exceeding the guaranteed bandwidth, while adding a second

identifier to the packet data when the packet data is transmitted exceeding the guaranteed bandwidth, and

a transmitting means for transmitting the packet data to which the identifier has been added to the

5 network.

17. A communication system as set forth in claim 15, wherein between the transmitter side and receiver side, said system comprises a router setting means for selecting one or more relay units.

10 18. A communication system as set forth in claim 17, further comprising a registering means for registering identifiers corresponding to packet data to be transferred without exceeding the set guaranteed bandwidth and guaranteed bandwidths thereof.

15 19. A communication system as set forth in claim 18, further comprising a delivering means for delivering the identifiers and the guaranteed bandwidths registered by the registering means to the transmitter side, a relay unit selected by the router setting means, and the

20 receiver side.

20. A communication method of a communication system for transferring packet data from a transmitter side to a receiver side via a network, comprising the steps of:

25 deciding whether or not the packet data is

transmitted exceeding a guaranteed bandwidth based on a guaranteed bandwidth set in advance with respect to the transfer of the packet data,

adding a first identifier to the packet data

5 when the packet data is transmitted without exceeding the guaranteed bandwidth in accordance with the result of the decision, while adding a second identifier to the packet data when the packet data is transmitted exceeding the guaranteed bandwidth, and

10 transmitting the packet data to which the identifier has been added to the network.